CAPS Infrastructure Report

Year:	2012
State:	Kansas
Cooperative Agreement Name:	Infrastructure Project
Cooperative Agreement Number:	12-8420-1223-CA
Project Funding Period:	July 1, 2012 - June 30, 2013
Project Report:	CAPS Infrastructure Report
Project Document Date:	July 1, 2012 - June 30, 2013
Cooperators Project Coordinator:	Laurinda Ramonda
Name:	Plant Protection and Weed Control
Agency:	Kansas Department of Agriculture
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Quarterly Report	☐
Semi-Annual Accomplishment Report	☐
Annual Accomplishment Report	☒

A. Compare actual accomplishments to objectives established as indicated in the workplan. When the output can be quantified, a computation of cost per unit is required when useful.

- April 11, 2012 - Agreement finalized
- July 5, 2012 - Received funding

ACTIVITIES

Possible Meetings and Outreach Tradeshows as Per Workplan

Meeting or Tradeshow	Month Planned	Month Occurred	SSC Attended and Where
National Plant Board	July	July	No, Connecticut
Great Plains Tree Pest Council	June/July	July	No
Shawnee County Fair	July	July	Yes, Topeka, KS
Horticultural Inspection Society Meeting	October	October	Yes, Manhattan, KS
Central Plant Board	March	April	Yes, Manhattan, KS
State CAPS committee meetings	(1 time a year)	May	Yes, Manhattan, KS
Shade Tree Conference	January	January	Yes, Topeka, KS
National Green Centre (Western Landscape and Nursery Tradeshow)	January	January	No, Springfield, MO not in Kansas this year.
Topeka Garden Show	February	February	Yes, Topeka, KS
Pest workshops	various times of year		None attended
National CAPS Committee	January	February	Yes, Austin, TX

Unplanned Meetings or Outreach Tradeshows

Meeting or Tradeshow	Month Planned	Month Occurred	Attended
Great Plains Growers Conference	**N/A**	January	Yes, St. Joseph, MO (educational booth)
Tree City USA Recognition Day	**N/A**	March	Yes, Derby, KS (educational booth)

- **Committee Service:**
  - **National CAPS Committee -** Central Plant Board State Survey Coordinator Representative – 2012-2014

- **Other Survey Work:**

  - **Seasonal Staff Interviews** – July 30, 2012 – Brent Jones interview for walnut twig beetle survey starting August 20, 2012 and Craig Stevenson interview for brown marmorated stinkbug survey starting August 8, 2012.

  - **Follow-up Visit For EAB call** – August 27, 2012

  - **Visual Delimiting/Branch Sampling EAB Survey** – September 11-12, 2012 – Assisted with grid survey around 5 mile radius of new state find of EAB.

  - **Follow-up Visit For EAB call** – September 25, 2012

  - **Visual Delimiting/Branch Sampling EAB Survey** – October 2-3, 2012 – Assisted with grid survey around Leavenworth County and marshaling yards of new state find of EAB.

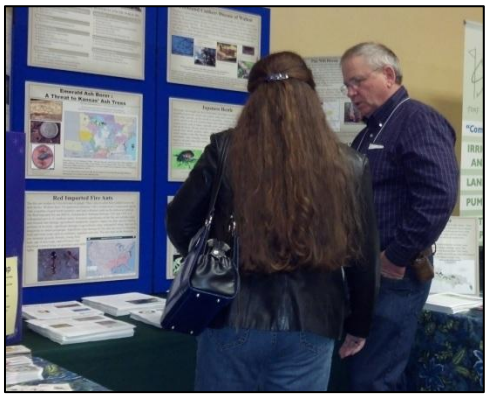
  - **EAB Trapping –** April 2-4, 2013 – Helped staff get 12 traps set in Pottawatomie county.

  - **Trap Trees –** April 16, 2013 – Helped with girdling trees for EAB trap trees in Johnson, Leavenworth and Wyandotte counties.

OUTREACH AND EDUCATION

- **Shawnee County Fair** – July 26-29, 2012 – Topeka, Kansas - Informational Booth **–** Laurinda Ramonda, Jeff Vogel, Greg Chrislip and Scott Marsh

- **Growers Growing Conference** – January 10-12, 2013 – St. Joseph, Missouri – Educational Booth – Laurinda Ramonda, Jesse Ostrander, Tom Sanders – approximately 400 people attended each day – annual conference for vegetable and fruit growers



Growers Growing Conference

- **Shade Tree Conference** – January 16-18, 2013 – Topeka, Kansas – Educational Booth and speakers – Laurinda Ramonda, Greg Chrislip, Jeff Vogel – annual conference for arborists – approximately 250 people attended each day

Shade Tree Conference

- **Kansas Garden Show** – February 15-17, 2013 – Topeka, Kansas – Educational Booth – Laurinda Ramonda, Scott Marsh, Jesse Ostrander, Greg Chrislip, Jeff Vogel – This show was very busy and the booth was full of people reading and picking up our literature and asking questions.

- **Tree City USA Recognition Meeting** - March 28, 2013 – Derby, Kansas – Educational Booth – Laurinda Ramonda

EAB Phone Calls

Date	Number of Calls	Date	Number of Calls
July 26, 2012	3	March 8, 2013	1
July 27, 2012	2	May 21, 2013	1
July 30, 2012	3	June 6, 2013	1
August 1, 2012	1		
August 21, 2012	1		
September 5, 2012	2		
September 14, 2012	1		
September 17, 2012	1		
September 18, 2012	2		
October 1, 2012	2		
October 4, 2012	4		
October 9, 2012	2		
October 31, 2012	1		
November 1, 2012	1		
November 5, 2012	1		

- **Interviews (TV/Radio/Newspaper/Magazines):**

  - April 1, 2013 – Press Release for EAB traps being set

- **Outreach materials (Pamphlets/ brochures/ posters):** (attached at end of report)

  - Fall 2012 Nursery Pest Newsletter
  - Spring 2013 Nursery Pest Newsletter

- **Publications:** (attached at end of report)

  - Aquatic Weed Watch List
  - Brown Marmorated Stinkbug
  - Emerald Ash Borer – Comparison Chart
  - Kansas Noxious Weeds List
  - Thousand Cankers Sampling brochure
  - Thousand Cankers Kansas Pest Alert

- **Public Service Announcements (PSA):**
  N/A

MEETINGS

- **2012 Walnut Twig Beetle Survey Planning Meeting** – July 5, 2012 – Topeka, Kansas – Jon Appel, Greg Chrislip, Laurinda Ramonda and Jeff Vogel

- **2013 Workplan Meeting** – July 12, 2012 – Topeka, Kansas – Jeff Vogel and Laurinda Ramonda

- **EAB Press Release Meeting** – July 25, 2012 – Jeff Vogel, Laurinda Ramonda and Mary Geiger (PIO) – meeting to produce press release about EAB find in Missouri.

- **EAB Survey Planning Meeting** – September 4, 2012 – Laurinda Ramonda, Erin Stiers and Greg Chrislip

- **EAB Meeting** – September 6, 2012 – Laurinda Ramonda, Erin Stiers, Vicki Wohlers, Barry Cole, Jeff Vogel and Greg Chrislip

- **CAPS Financial Meeting** – September 26, 2012 – meeting to look at survey fund balances for final spending plans and to determine survey end dates.

- **New KDA Website Meeting** – October 18, 2012 – meeting to discuss new website for the Kansas Department of Agriculture

- **Horticultural Inspection Society Meeting** – October 23-25, 2012 – Manhattan, Kansas – Laurinda Ramonda, Bob Buhler, Greg Chrislip, Jeremy Maples, Jesse Ostrander and Cherie Copeland

- **Plant Protection & Weed Control Website Development** – November 7, 2012 – Jeff Vogel and Laurinda Ramonda

- **Plant Protection & Weed Control Website Development** – November 8, 2012 – Jeff Vogel and Laurinda Ramonda

- **Plant Protection & Weed Control Website Development** – November 9, 2012 – Jeff Vogel and Laurinda Ramonda

- **Website Training** – November 13, 2012 – Jeff Vogel and Laurinda Ramonda

- **CAPS Financial Meeting** – November 14, 2012 – meeting to look at survey fund balances

- **Plant Protection & Weed Control Webpage Meeting –** November 26, 2012 – Laurinda Ramonda and Jeff Vogel

- **KDA Plant Protection and Weed Control Staff Meeting** – December 3, 2012 – December 5, 2012 – Topeka, Kansas

- **Plant Protection & Weed Control Webpage Meeting –** December 10, 2012 – Laurinda Ramonda and Bart Sprague (website admin)

- **Plant Protection & Weed Control Webpage Meeting –** December 11, 2012 – Laurinda Ramonda and Bart Sprague (website admin)

- **SPHD, SPRO, SSC Meeting** – February 7, 2013 – Discussion about partial karnal bunt funding and EAB survey.

- **Plant Protection & Weed Control Webpage Meeting –** February 8, 2013 – Laurinda Ramonda and Jeff Vogel – Bart Sprague (website admin), preparing for site to go live.

- **National CAPS Committee Annual Meeting** – February 12-13, 2013 – Austin, Texas

- **Website Meeting** – February 15, 2013 – Laurinda Ramonda and Bart Sprague (web administrator)

- **KDA Plant Protection and Weed Control Staff Meeting** – March 5-6, 2013 – Topeka, Kansas

- **Walnut Twig Beetle Survey Planning Meeting** – March 11, 2013 – Jon Appel, Laurinda Ramonda, Jeff Vogel – Topeka, Kansas

- **Four Point Sheridan Hotel Meeting** – March 12, 2013 – Laurinda Ramonda, Jeff Vogel - Manhattan, Kansas – planning for Central Plant Board meeting in April

- **Permitting Discussion Meeting** – March 22, 2013 – Laurinda Ramonda, Jeff Vogel, KDA – Topeka, Kansas – preparation for emergency exercise

- **KDA Relocation Meeting** – April 19, 2013 – Laurinda Ramonda and Plant Protection and Weed Control Office – discussion about program moving to Manhattan in 2014

- **Central Plant Board Annual Meeting** – April 28-May 2, 2013 – Manhattan, Kansas – This meeting also included an SSC breakout session.

- **State CAPS Committee Meeting** – May 21, 2013 – Manhattan, Kansas – KDA, USDA, KDWPT, KSU.

- **Permit Management Meeting** – June 25, 2013 – Topeka, Kansas – preparation for emergency exercise in October.

    - **<u>Conference Calls:</u>**

        - **KDA Plant Protection and Weed Control Monthly Conference Call** – July 9, 2012 – Topeka, Kansas

        - **National CAPS Committee Conference Call** – July 19, 2012

        - **Great Plains Forest Partnership Conference Call** – July 19, 2012

        - **Kansas Multi-Agency EAB Conference Call** – July 30, 2012 – KDA, USDA, KFS, KSU and Corp. of Engineers call regarding Missouri EAB find and plan of action for Kansas.

        - **EAB SITREP Report Call** – July 31, 2012 – Erin Stiers, Vicki Wohlers, Jeff Vogel, Laurinda Ramonda and Mike Brown (MO SPHD) regarding EAB situation in Missouri.

        - **Missouri EAB Outreach Meeting Conference Call** – August 1, 2012 – Laurinda Ramonda and Greg Chrislip – meeting to discuss Missouri EAB outreach

        - **KDA Plant Protection and Weed Control Monthly Conference Call** – August 13, 2012 – Topeka, Kansas

        - **PSS/SSC Conference Call** – August 13, 2012

- **Kansas Multi-Agency EAB Conference Call** – August 30, 2012 – KDA, USDA, KFS, KSU and Johnson County Parks call regarding Kansas EAB find and plan of action.

- **National CAPS Committee Conference Call –** September 6, 2012

- **Kansas EAB Compliance Agreement Conference Call** – September 25, 2012 – discussion of Wyandotte County EAB quarantine implementation and compliance agreement work

- **EAB Survey Grid Follow-up Conference Call** – September 26, 2012 – follow-up to EAB grid survey work from September 11-12.

- **National CAPS Committee Conference Call** – October 4, 2012

- **Central Plant Board Planning Conference Call** – October 5, 2012

- **KDA Plant Protection and Weed Control Monthly Conference Call** – October 8, 2012 – Topeka, Kansas

- **EAB Outreach Conference Call** – October 9, 2012 – planning call with Kansas Forest Service regarding EAB meetings

- **National CAPS Committee Conference Call –** November 1, 2012

- **FY13 Farmbill Process Conference Call** – November 2, 2012

- **EAB Compliance Agreement Conference Call** – November 5, 2012 – planning call for EAB compliance agreements

- **Central Plant Board State Survey Coordinator Conference Call** – November 9, 2012

- **Central Plant Board Planning Conference Call** – November 19, 2012

- **Great Plains Forest Partnership Conference Call** – December 6, 2012

- **National CAPS Committee Conference Call –** December 13, 2012

- **MDA/KDA Firewood Movement Conference Call** – December 18, 2012

- **PSS/SSC Conference Call –** December 20, 2012

- **2013 Exotic Oak Survey Conference Call** – December 31, 2012 – Vicki Wohlers, Jeff Vogel, Laurinda Ramonda – discussion about agreement

- **National CAPS Committee Conference Call –** January 3, 2013
- **Firewood Survey Conference Call –** January 8, 2013 – Plant Protection and Weed Control program
- **Central Plant Board Planning Conference Call** – January 8, 2013
- **KDA Plant Protection and Weed Control Monthly Conference Call** – January 23, 2013 – Topeka, Kansas
- **Central Plant Board Planning Conference Call** – January 28, 2013
- **National CAPS Committee Conference Call –** February 7, 2013
- **Central Plant Board State Survey Coordinator Conference Call** – February 28, 2013
- **National CAPS Committee Conference Call –** March 7, 2013
- **Central Plant Board Planning Conference Call** – March 13, 2013
- **EAB Trap Tree Conference Call** – March 15, 2013
- **Central Plant Board Planning Conference Call** – March 27, 2013
- **National CAPS Committee Conference Call –** April 4, 2013
- **KDA Plant Protection and Weed Control Monthly Conference Call** – April 8, 2013 – Topeka, Kansas
- **KC Area EAB Discussion** – April 8, 2013 – Discussion on Kansas City area trash haulers
- **National CAPS Committee Conference Call –** May 2, 2013
- **National CAPS Committee Conference Call –** June 6, 2013
- **KDA Plant Protection and Weed Control Monthly Conference Call** – June 10, 2013 – Topeka, Kansas

- **Conferences:**
  N/A

- **Webinars:**
  - **Farmbill Help Session Webinar** – November 15, 2012
  - **2013 EAB Survey Presentation** – December 19, 2012
  - **EAB Research and Insecticide Update** – March 21, 2013

TRAINING

- **Kansas Department of Agriculture Website Training** – November 13, 2012 – Training for webpage administrators
- **Kansas Foreign Animal Disease Preparedness Overview** – January 16, 2013 – Laurinda Ramonda and Jeff Vogel – Emergency management training

OTHER

B. If appropriate, explain why objectives were not met.*

C. Where appropriate, explain any cost overruns or unobligated funds in excess of $1,000. *

D. Supporting Documents

- Attached to end of report

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indicates information is required per 7 CFR 3016.40 and 7 CFR 3019.51

Approved and signed by:

_____ **Date:** _____
Cooperator

_____ **Date:** _____
ADODR

Minutes from CAPS Committee Meeting on May 21, 2013

The state CAPS Committee met on May 21, 2013 at 9:00 am at the Dean's Conference room, 137 Waters Hall at Kansas State University. In attendance were: Erin Stiers-USDA-APHIS-PPQ, Craig Webb-USDA-APHIS-PPQ, Judy O'Mara-KSU Plant Pathology, Megan Kennelly-KSU Plant Pathology, Jessica Howell-KDWPT, Scott Marsh-KDA, Jeff Vogel-KDA, Greg Chrislip-KDA and Laurinda Ramonda-KDA.

Introductions were made.

Project Results for calendar year January 1-December 31, 2012:

- Karnal Bunt – 141 samples taken from 31 central counties. No karnal bunt detected.

- Emerald Ash Borer – 362 traps were planned for Kansas. 100 traps in 19 counties for KDA and 262 traps were planned but ~210 were set by USDA for the rest of the state. Traps were set according to a new protocol by USDA which gave us 1 km squares to set traps in. If those areas were unsuitable to place the traps then they were set somewhere else in the same counties, if possible. The counties KDA trapped were around the field inspectors offices. KDA - 30% of the traps were lost by end of the survey and 37% were set in the pre-assigned grid locations. No EAB found.

- Oak Pest Commodity – Both 2011 and 2012 surveys ran concurrently in 2012 because funding was received too late to start the 2011 survey the previous year. 50 sites were trapped in the southeast and northeast part of the state. Pests trapped for: Rosy Gypsy Moth, False Codling Moth, Summer Fruit Tortrix, Green Oak Tortrix, Variegated Golden Tortrix, Asian Gypsy Moth and European Gypsy Moth. 47 traps from the southeast and 133 traps from the northeast were sent to the identification lab in Washington state. All were negative for the target pests.

- Purple Loosestrife Biological Control – This was the 1st year for this project. 200 Loosestrife root weevils were released at each site in Doniphan and Johnson counties in July.

- Brown Marmorated Stinkbug – 50 traps in 31 sites in 20 counties in the northeast and north central part of the state and Wichita in September and October. None were found.

Farmbill Surveys:

- Walnut Twig Beetle and Thousand Cankers Disease of Walnut – Trapping with a 4 funnel lindgren funnel trap and lure for the walnut twig beetle occurred in September and October. 134 traps in 68 sites in 23 counties in the north central and northeast part of the state with 2 traps at each site. Trapping began again on May 6, 2013 to finish out project. No WTB was found in the fall of 2013.

- Khapra Beetle – 51 traps in 23 sites with 2 traps at each site occurred at ethnic stores in September and October 2012 and January through March 2013. Sites were in Manhattan, Lawrence, Kansas City and Wichita. No khapra beetle was found.

Surveys Calendar year January 1-December 31, 2013:

- Exotic Oak Pest Commodity Survey (pest detection) – 3rd and last year – 50 traps in the western counties. Traps will be set for rosy gypsy moth, false codling moth, summer fruit tortrix, green oak tortix, variegated golden tortrix, Asian and European gypsy moth. Funding to be cut by 7.8% and project will most likely be extended to occur in 2014 since cooperative agreements have not been signed off on yet. Too late to begin survey.

- Karnal Bunt – Sampling will begin in mid-June. 146 samples are planned from the western counties. A partial cooperative agreement was signed for 47% of the funding asked for. Have not heard if any additional cuts will be made to funding yet.

- Emerald Ash Borer – 65 traps placed by KDA in 9 counties – Butler, Jewell, Leavenworth, Neosho, Osborne, Pottawatomie, Russell, Smith and Shawnee. 375 traps for USDA for the rest of the state. 440 traps for Kansas were to be set according to FHTHET grids by USDA (protocol same as 2012) which gave us 1 km squares to set traps in. The counties KDA trapped were around the field inspectors offices. 32% of the traps were placed in the pre-assigned locations. This was down by 5% from the previous year. All KDA traps were up by the 1st week in April. No cooperative agreements have been signed yet and haven't heard if funding cuts will be made.

- Purple Loosestrife bio-control – This will be the 2nd year for the release. No cooperative agreements have been signed yet and haven't heard if funding cuts will be made.

Farmbill Surveys:

- Walnut Twig Beetle: Vector of Thousand Cankers Disease of Walnut (Farm bill proposal) – $10,000 has been awarded for this survey. This was ½ of what we asked for. Survey is planned to start on June 1 using seasonal staff for trapping for June and July in the southeast and near Wichita.

- Khapra Beetle – $8,000 has been awarded for this survey. This survey is planned for July and August at 40 sites in Junction City, Kansas City, Lawrence, Manhattan, Salina, Topeka and Wichita.

- Grape Commodity - $38,440 has been awarded for this survey. 65 sites (vineyards) are planned for in 23 counties, mostly in the northeast part of the state but some in Hays area, Wichita area and 1 in Cherokee county. As soon as lure is received we will begin this project.

Other:

- Emerald Ash Borer – 2 ground surveys done in grid sections in a 5 mile radius of find in Missouri and Wyandotte county with branch sampling. No EAB found.
- Tree Girdling – 7 trees, 3 in Wyandotte, 2 in Leavenworth and 2 in Johnson county. These will be checked and serviced May 28 by Nicole Opbroek from the KFS. They will be serviced once a month through the summer and then taken down and bark peeled in the fall.

State Specialist Updates:

Jeff Vogel – program manager:

- Gave presentation on EAB find and trap tree locations.
- Looking at trash facilities to address issues
- Quarantine in Wyandotte county since August 2012
- KDA move – Mills building (downtown) lease has ran out
  - Forbes Field in in the county and lease is good until 2017
  - Moving Mills building offices to Manhattan and some programs at Forbes Field, Plant Protection and Weed Control (PPWC) as of now is in the current plans to move
  - Discussions with the executive team has occurred about the needs of our program and the current design of the Manhattan building (only office space) would not be able to meet our needs for lab space (for sorting specimens, etc.) and the ~1,000 ft. storage space (ATV's, refrigerator and freezers for lure and specimens, and traps)
  - No decision has been made about PPWC yet

Greg Chrislip – state entomologist:

- Brown Marmorated Stinkbug – There has been publications that have stated that BMSB has been found in Kansas. We have not been able to verify this. We are currently looking into who has the specimen. Protocols have not been followed in regard to the new find.
- Walnut Twig Beetle – 1 *Pityophthorus* was sent for identification but not *juglandis.*
- Khapra Beetle – Wheat germ was missing in many traps when going back to service them and we found out it was been eaten by cockroaches.
- Oak – Mostly leafrollers were being found. Hundreds of traps were sorted through.

Scott Marsh – state weed specialist:

- Purple Loosestrife – Bio-control release was made at Doniphan county city lake and private land (abandoned nursery) in Johnson county in July (heat of the summer). The Johnson county site was mowed so survival is slim. In Doniphan county no damage has been seen. When funding for 2013 occurs, releases are planned for Doniphan and Bourbon county.
- Hydrilla Update – Johnson county pond – None has been found downstream. City treats yearly and populations seem to be maintained. Treatment is with Sonar (fluridone).
- Dalmation and Yellow Toadflax – Bio-control releases are being looked at
- Phone App – For reporting noxious weeds. EDD Maps West – covers west of the Mississippi - www.eddmaps.org/

USDA-APHIS-PPQ Updates:

Erin Stiers:

- 2014 CAPS guidelines are out
  Changes for 2014 from 2013:
  - Plan on same funding levels from 2013 but with the 7.8% cut
  - The Guidelines document and appendices were update to reflect the new PPQ organizational structure
  - The intent of the Infrastructure is to support the State Survey Coordinator position and critical infrastructure needs to support the position. States are encouraged to leverage funding from other programs to cover and reduce Infrastructure costs.
  - In an attempt to capture the various activities funded under the Infrastructure component,
    states are required to submit an Infrastructure report with metrics.
  - New commodity and taxon surveys for 2014 CAPS and/or Farm Bill are Asian Defoliators, Mollusks, Palm, and Solanaceous Crops.
  - As for 2013, surveys have been split between CAPS and Farm Bill. This was done to provide a clear distinction between the surveys focused on specialty crops and other commodity and taxonomic based surveys. The Farm Bill emphasizes specialty crops whereas CAPS is broader in scope. In the current economic climate we need to leverage other funding venues. Asian Defoliators, Grape, Palm, Solanaceous Crops, and Stone Fruit Commodity Surveys, and other surveys based on specialty crops, will not be offered through CAPS for 2014 funding. These surveys should be requested for Farm Bill funding.
  - The present plan is for all CAPS survey data to be entered into NAPIS for the 2014 field season.
  - The CAPS Management Team and the NCC have instituted a formal CAPS Recognition program.
- PPQ reorganization – now there are 3 groups: operations, policy, science
- 7.8% cut in funding for Pest Detection (Infrastructure and Commodity survey)
- Priority Surveys are need to be based on commodity, taxonomic group or bundled and have a pathway approach.
- EAB trapping – 2012 - 210 traps set by USDA, 2013- 407 were supposed to be set by USDA but 268 were actually set - ~60% of the pre-assigned locations for traps were thrown out
- Gypsy Moth – doing trapping by grid system, ~500 traps set with 130 in Johnson county because it is considered a Category I.
- Lindgren traps – some are set for bark beetles
- Japanese Beetle – trapping being done at airports, some have been found near Ft. Riley.

State Specialists Updates:

Jessica Howell:

- Looking to have more cooperation with KSU, KDA on aquatic weeds

Craig Webb:

- Lab does samples from 23 states west of the Mississippi (western hub)
- Grapevine Yellows – looking into sending technician to training in July at the USDA Ag Research with Bob Davis in California
- SOD & Phytophthora – biggest part of work load
- Lab is able to do all work and send results electronically to Beltsville for final verification
- Citrus Greening – still running samples
- PCN - some samples from Idaho

Megan Kennelly:
- Working on diseases that are already in Kansas and United States
- TCD – doing outreach, had 3-4 samples last year
- iwheat.org – has insects and diseases that are already here
- GPDN – budgets have decreased significantly over the last couple of years, don't know what the future holds.
- Growers samples have increased but county agent samples have decreased

Judy O'Mara:
- Drought has brought more negative pine wilt samples
- Corn – aspergillus has been an issue
- Routine diseases are starting to show up
- Impatiens Down Mildew - commercial growers are still growing, questioning whether it is too dry for disease, could get from other states
- One sample for oak wilt testing came in that wasn't part of the CAPS survey

<u>Possible 2012 survey ideas:</u>
- Soybean Commodity
- Pathway Survey – transportation hubs
- ?
- Issue with funding may cause the 2013 Oak Commodity survey to be extended to 2014 so need to consider more targeted type of survey for 2014 instead of a more generalized one like a pathway survey.

Thanks to all who attended and the information shared.

Nursery Pest Newsletter

Plant Protection and Weed Control
Kansas Department of Agriculture
P.O. Box 19282, Forbes Field, Building 282
Topeka, Kansas 66619
www.ksda.gov/plant_protection/
Phone: 785-862-2180 FAX: 785-862-2182

Fall 2012

Emerald Ash Borer Update

Jeff Vogel, Program Manager

Emerald ash borer, a pest of ash trees that is native to Asia, was first discovered in North America near Detroit, Michigan in the summer of 2002. Since that time, the pest has killed millions of ash trees. Emerald ash borer has been found in the following states: Ohio (2003); Indiana (2004); Illinois; Maryland (2006); Pennsylvania; West Virginia (2007); Missouri; Virginia; Wisconsin (2008); Kentucky; Minnesota; New York (2009); Iowa; Tennessee (2010); Connecticut; Kansas; and Massachusetts (2012).

The first-ever presence of emerald ash borer in Kansas was confirmed in Wyandotte County. The discovery was made by Kansas Department of Agriculture and United States Department of Agriculture (USDA) staff during a survey being conducted as a result of the July 20, 2012 confirmation of emerald ash borer in Platte County, Missouri. During a visual survey, the staff identified a tree that showed symptoms of the emerald ash borer. They removed a portion of the tree and sent it to a USDA lab in Michigan for further analysis. Regulatory officials at USDA's Animal and Plant Health Inspection Service's Plant Protection and Quarantine (USDA-APHIS-PPQ) division removed larva from the sample and confirmed the presence of emerald ash borer on August 29, 2012.

Immediately after confirmation by USDA, Kansas implemented an emergency intrastate quarantine for Wyandotte County to prevent further spread of emerald ash borer in Kansas. The quarantine applies to any corporation, company, society, association, partnership, governmental agency, and any individual or combination of individuals. It prohibits movement of regulated items from the quarantined area, except under specific conditions established in the quarantine order.

Regulated items under quarantine include the following:

- The emerald ash borer, (Agrilus planipennis [Coleoptera: Buprestidae]), in any living stage of development;
- Firewood of all hardwood (non-coniferous) species;
- Nursery stock of the genus *Fraxinus* (Ash);
- Green lumber of the genus *Fraxinus* (Ash);
- Other material living, dead, cut, or fallen, including logs, stumps, roots, branches, and composted and uncomposted chips of the genus *Fraxinus* (Ash);
- Any other article, product, or means of conveyance that an inspector determines presents a risk of spreading emerald ash borer and notifies the person in possession of the article, product, or means of conveyance that it is subject to the restrictions of the regulations.

The quarantine, effective as of August 29, will remain in effect for a period of 90 days or until rescinded or modified by order of Kansas Secretary of Agriculture Dale Rodman.

KDA in conjunction with USDA, Kansas Forest Service, K-State Research and Extension, we have been conducting visual surveys of ash trees in a 5 mile radius of both the Kansas and Missouri finds.

If Kansans think any of their trees may have the pest, they should notify the Kansas Department of Agriculture (KDA) immediately at (785) 862-2180 or at ppwc@kda.ks.gov. Email photos of the whole tree, a close-up of the leaves and photos of the insects or damage (exit holes, tunnels, etc.) with something in the photo as a size reference (coin or ruler). Also send your name, address, phone number and reason for contacting us with the photos.

In cooperation with USDA-APHIS-PPQ, the Kansas Forest Service and K-State Research and Extension, KDA

plans to host town hall meetings with Kansans as well as industry and local government stakeholder meetings to provide information about emerald ash borer and to ensure that all necessary facilities and individuals are equipped to treat and dispose of emerald ash borer infested material properly to prevent further spread of the pest.

To learn the most current information on the quarantine and meeting schedule, visit: www.ksda.gov/plant_protection/content/379.

To learn more about the emerald ash borer, visit: www.emeraldashborer.info.

Japanese Beetle (*Popillia japonica*) Update

Greg Chrislip, State Entomologist

With the new Pest Freedom Standards, there is no tolerance for Japanese beetles. As such, plant nursery professionals should have a solid understanding of the Japanese beetle.

Currently 35 states are considered infested with Japanese beetle. Some states have confirmed the beetle through surveys but are not considered infested. In Kansas, Japanese beetle is established with limited distribution.

Larvae which mature in June create an earthen cell. The prepupa voids its stomach contents and appears translucent. The pupa is then formed inside the split skin of the pupa. Newly emerged adults release a congregation pheromone to attract other emerging beetles. The females produce an additional pheromone.

Mating takes place on plants, with both male and female beetles mating several times. After several days the females leave the feeding site, and burrow into the soil typically 2- to 4-- inches deep. The female will lay between one and five scattered eggs before reemerging from the soil. The cycle of eating, mating, burrowing and egg laying is repeated until approximately 60 eggs are laid.

Egg development happens quickly under high temperatures. For example, development takes eight or nine days at (80° to 90 °F). If soil temperatures are cool (68 °F), the development can take up to 30 days. By autumn most grubs have reached third instar and begin to burrow deeper (up to eight inches). As the soil temperatures approach 60 °F in the spring, the grubs continue to develop. In late autumn, the grubs start burrowing deeper into the soil and remain inactive all winter.

In early spring they return to the turf where they continue to feed, until pupation in late spring.

For more information on the Japanese beetle visit the Spring Insect Report at: www.ksda.gov/emailmarketer/display.php?List=27&N=740

Autumn Olive, A Weed to Watch For

Scott S. Marsh, State Weeds Specialist

Plant health professionals are familiar with the state's designated and county optional noxious weeds, which can be found online at: www.ksda.gov/plant_protection/content/349. While it is important to recognize the species on the list, it is important to know that those are not the only weeds you should be keeping an eye out for. There are several other species that are not listed but are very invasive and could cause as much trouble as the noxious species.

One of these highly invasive species is a tree called autumn olive (*Elaeagnus umbellata*). It was originally introduced from Japan in 1830 as an ornamental and has since been planted throughout the Eastern United States as a wildlife food source and for erosion control. Because the fruit of the tree is so well liked by birds and other wildlife, it spreads quickly and will take root almost anywhere. It is also hard to kill and will resprout after being cut or burned down and transforms open fields into dense thickets in which nothing else can grow.

Autumn olive trees grow up to 20 feet tall as a small tree or a large shrub. Its leaves are long and narrow and the undersides are covered with silver to white scales which can give the tree a grayish green look from a distance. The flowers are small, tubular and pale yellow and appear in clumps along the twigs in May to June soon after the leaves have set. The fruit is a small, red berry and is produced in large quantities. The autumn olive is most often confused with a close relative and fellow invasive species, the Russian olive (*Elaeagnus angustifolia*). In Kansas, the

Russian olive is widespread throughout the state while autumn olive has only been reported from Leavenworth and Wyandotte counties.

Autumn olive grows well in a variety of soils and soil conditions but does best in sunny areas such as disturbed areas, roadsides, pastures and fields. It has nitrogen-fixing root nodules which allow it to thrive in poor soils. Mature trees tolerate light shade, but produce more fruits in full sun, and seedlings may not do as well in the shade. It does not grow well on wet sites or in densely forested areas. It is drought tolerant and may invade grasslands and sparse woodlands.

Part of the reason for the autumn olive's being invasive is that they are hard to control. If the seedlings are young enough and the soil is moist and loose enough, you can pull them out of the ground in the early spring. If they are not pulled early, however, they will grow too large and be unable to pull all of the roots out.

If the trees are short enough, you can spray the leaves with products such as imazapyr or glyphosate during the growing season. You should be very careful with this approach because the possibility for drifting pesticides is great and glyphosate products are nonselective which means they will kill almost everything they touch.

For trees that are too tall or for a method with more control, you can apply a triclopyr product to the bark of young trees during the dormant season. One of the more effective methods for trees of all sizes and ages is to cut the tree down and immediately apply a triclopyr, picloram or glyphosate product to the stump.

Closely following all rules and instructions with applications is critical and required by law. Because autumn olive is not a designated noxious weed in Kansas, you will not be able to use cost-share chemicals to treat it.

There are several other species that can be purchased and planted instead of autumn olive, such as Buffaloberry (*Shepherdia argentea*), Silky willow (*Salix Sericea*), Rosemary willow (*Salix elaegnos*), Redosier dogwood (Cornus Sericea) and Silverberry (Elaeagnus commutate), among others. Watch future Nursery Newsletters for more *Weeds to Watch for*.

New Kansas City Metro Area Staff

Jesse Ostrander is our new NE/KC Metro area staff member. His field office is in Lawrence and is originally from the Northwest Topeka area. He received his horticulture degree from Kansas State University in 2010. Jesse is currently finishing a master's degree in plant pathology and has worked for two years as a graduate research assistant (GRA) under Dr. Megan Kennelly, K-State Horticulture and Turf Extension Pathologist. While working as a GRA, Jesse had the opportunity to teach undergraduate students in a plant pathology lab course. In his free time, he enjoys canoeing and bicycling.

Trapping and Survey Programs

The national trapping survey for emerald ash borer in 2012 consisted of setting 309 traps in Kansas. Of these, 100 were set by the KDA and 209 were set by USDA-APHIS-PPQ. The state trapped Cherokee, Crawford, Douglas, Franklin, Graham, Harvey, Labette, Montgomery, Morris, Neosho, Norton, Osage, Osborne, Phillips, Pottawatomie, Riley, Rooks, Sedgwick, Smith, Sumner, Wabaunsee and Wilson counties. The traps were put up in USDA pre-planned areas. If those areas were not suitable the traps were moved to campground sites. The traps were up from March until August. No emerald ash borer was found in the traps. For information on the emerald ash borer, visit: www.emeraldashborer.info

In 2012, an oak pest commodity survey was conducted. This detection survey gathered data to determine the status of exotic oak pests in Kansas. The eastern half of the state was surveyed at 100 sites. Next year (2013), the western half of the state will be surveyed with 50 sites being trapped. Kansas has a high population of oak in the eastern part of the state and other large areas throughout the state. The potential loss could be substantial to the ecosystem,

agriculture, the lumber and nursery industry and communities if these pests are not detected early.

Trapping occurred for the rosy gypsy moth, false codling moth, summer fruit tortrix, green oak tortrix, variegated golden tortrix, Asian gypsy moth and European gypsy moth.

Early results are coming in for the oak pest survey. So far, none of the targeted pests have been identified.

Our traps are collecting a large number of moths and some butterflies. The following chart lists species and amount, we have currently identified in our traps.

Argyrotaenia velutiana (Tortricidae)	57
Gymnandrosoma punctidiscanum (Tortricidae)	106
Asterocampa celtis (hackberry emperor butterfly)	32
Tortricidae (unspecified)	7
Geometridae (unspecified)	7
Noctuidae (unspecified)	40
Gelechiidae (unspecified)	2
Choristoneura roseceana (Oblique banded leafroller) Tortricidae	1552
Lepidoptera (unspecified)	110
Total	**1913**

The brown marmorated stinkbug will feed on a wide variety of shade and fruit trees, vegetables and legumes. This pest could become a major agricultural pest in the United States and could cause crop loss and economic hardship in Kansas. Traps were placed at 25 sites during August and September. Two traps were placed at box stores and live plant dealers. No target pests were found.

Now that there is a trap and lure available for the walnut twig beetle, a trapping survey is occurring now and will continue in the spring of 2013. One hundred traps at 50 sites will be set at sawmills, recreation areas and areas with walnut trees.

Another national trapping survey is for the Khapra beetle. In September and October, two traps at 23 international stores in Manhattan, Topeka, Lawrence, Kansas City and Wichita were set.

We also released loosestrife root weevils into purple loosestrife in Doniphan and Johnson counties. This will occur for three years.

We always appreciate the live plant dealers who let us put traps on their property. This type of work is of great importance in protecting Kansas. Early detection will improve the odds of eradication and containment success if the pests are found.

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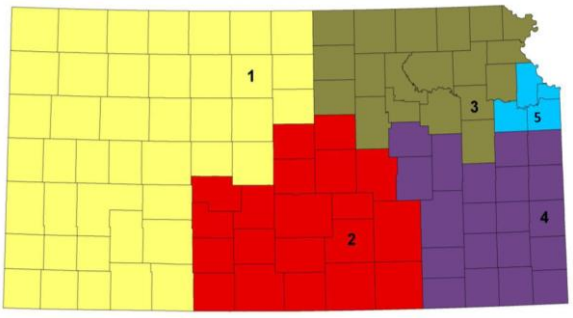

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046-13

Nursery Pest Newsletter

Plant Protection and Weed Control
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Spring 2013

Plant Disease Corner:
Jon A. Appel, Plant Pathologist

Downy mildew (DM) of Impatiens, Plasmopara obducens: This disease is specific to *Impatiens walleriana* and has been present in the United States since 2004. Garden or double Impatiens are known for showy colors in the shady areas of the landscape and of great popularity. Almost every greenhouse and retailer in Kansas sells them.

Early yellowing from DM. Greenhouse Grower

Why is Downy mildew a concern to Impatiens growers and retailers? Control of Downy mildew can be costly and the disease can easily move through a greenhouse or a display destroying a valuable crop in a very short time. Here are a few tips to avoid and manage the disease.

- The disease is moved easily by cuttings of the plant. There is a latent period of five to 14 days depending on moisture, temperature and humidity. Growers are encouraged to isolate new cuttings into houses away from those plants that are almost ready to be marketed and full of flowers and foliage. Consider starting impatiens from seed to lower the risk of introduction. Retailers should physically separate shipments of Impatiens when possible. Do not overcrowd.

Mildew growth on underside of leaf, Purdue University.

- Scout plants especially the ones from cuttings for early signs of the disease. Look for leaves that are light green, stippling or tips that are turning downward. These infected leaves will then produce a white mold on the underside of the leaf. If a white mold is found (a hand lens can help), then spores are being produced and can be carried by wind currents or water. Young plants and tender foliage are very susceptible to DM.

- If the disease is found to be aggressive fungicide programs should begin immediately (see http://extension.umass.edu/floriculture/fact-sheets/downy-mildews-ornamental-plants fungicides and schedules). Infected plants should be bagged up and disposed of immediately. It is better to bag up the plants on the spot than drag them through the greenhouse. Immediately clean up all debris and keep impatiens out of the area. Any remaining soil or impatiens debris can harbor a resting stage of the fungus called oospores that survive for several years. Do not merely throw infected plants on a refuse pile. The fungus will survive, sporulate and infect nearby impatiens in your other production houses as winds or workers carry the spores back into the operation. Workers should not work with or near other Impatiens until they have showered and changed clothing after handling diseased plants.

- Some growers may want to start a preventative fungicide program. Talk with your supplier and see what their management program is and the history of the disease. It is important to rotate fungicides by their mode of action for control

and knowing what the supplier has been using and the frequency will help you decide on a program.

- Consider alternative plants. Sakata SunPatiens and Ball's FloraPlants Celebration are reported to be highly tolerant. New Guinea Impatiens (*Impatiens harkerii*) are widely reported as resistant.

- Be aware of other diseases and insect pests of Impatiens. Root rots will cause yellowing of leaves. Apply the pull test to a few plants, root rotted plants easily pull up. Fungus gnats and thrips can also act as carriers of DM spores through a greenhouse. Keep all insect populations to a minimum. Gray mold will yellow leaves like DM but fungus sporulation is gray in color and occurs on all surfaces of plant tissue.

- Downy mildew can be subject to the State of Kansas Plant Pest Act Plant Pest Freedom Standards if infection exceeds 15 percent of the lot or cultivar. Measures must then be taken to reduce percent of infected plants below 15 percent before sale or distribution.

Did you know?
Kansas is considered a protected state by USDA regulation regarding Black Stem Rust of Wheat. Barberry, because of its importance as an alternative host to Black Stem Rust, can only be propagated in Kansas through vegetation cuttings from an USDA approved resistant cultivar. No seed production is allowed.

Kansas has a quarantine regarding importation of walnut trees and saplings. Importers must reach a compliance agreement with the Kansas Department of Agriculture regarding importation and movement of plants. States to the west of Kansas and the states of North Carolina, Ohio, Pennsylvania, Tennessee and Virginia have known reports of the disease insect complex and importation is nearly prohibited.

A Spring Tale
Greg Chrislip, State Entomologist

Springtails are small insects that belong to the order Collembola. Springtails are only about 1-2 mm long. However, due to structures on the abdomen, which gives them their common name springtails can move up to 4 inches in a single motion. The springing appendage on the abdomen is a hinged structure bent forward called the furcula. The furcula is held in place by a latching mechanism called a tenaculum. When the furcula is released from the tenaculum, it springs down catapulting the springtail forward. The springtails are perhaps the most numerous creatures with some estimates of 50,000 springtails per 1 cubic foot of organic topsoil.

The majority of collembolan are helpful detritivores found in the soil feeding on fungi, decaying vegetation, pollen, algae, lichens, bacteria and insect frass (feces). On occasion springtails will invade homes if moisture in their habitat begins to dry. To help prevent home entry, pull mulch away from the foundation of the house. Also mulch should only be 2-4 inches deep and allowed to dry between watering. The springtails may also be come into the house in the soil of potted plants.

Garden Springtail - *Bourletiella hortensis* Photo by: Tom Murray/Bugwood

While the majority of springtails are beneficial detritivores, a number of species can be agricultural pests. The garden springtail, *Bourltiella hortensis*, feeds on the young tender leaves of plants. The feeding results in shot holing of leaves. Plants fed upon include beans, beets, broccoli, cabbage, cantaloupe, carrot, cauliflower, celery, lettuce, onion, pea, potato, pumpkin, radish, spinach, squash, tomato and watermelon (University of Minnesota). In Australia an introduced collembolan, *Sminthurus viridis*, is a major pest of alfalfa. Other springtails in the genus *Onychiurus* attack the roots of plants.

A real natural wonder in late winter is finding snow fleas, a type of springtail that is often found on top of snow. Large numbers of *Hypogastrura nivicola*, make the snow looked like it has been sprinkled heavy with black pepper, but closer examination reveals the spots are moving.

Insecticidal treatments are generally not required for springtail control. If springtails invade the home due to dry weather outdoors, keep the area indoors dry and clean and they will soon disappear. If chemical control is needed in the garden there are a number of effective controls available. Springtail numbers can

also be controlled in garden settings by planting in areas with high organic matter.

Yellow Starthistle, A Weed to Watch For

Scott S. Marsh, State Weeds Specialist

Early Detection and Rapid Response (EDRR), this is a very significant concept in the management of invasive species. It refers to the importance of finding new populations of invasive plants and taking quick and effective action to eradicate or control them before they have a chance to become established and spread. We have several EDRR species that have already established a foothold in Kansas and even more that have not yet crossed our borders.

Yellow starthistle (*Centaurea solstitialis*) is most definitely an EDRR species. It is an annual plant, which means it lives for only one growing season, produces seed and dies. How can a plant that lives for only one season be a problem? By producing a lot of seed and having help in spreading that seed. Yellow starthistle seed is a common contaminant in uncertified hay, straw and seed. It is also unwittingly transported on the undercarriages of vehicles that drive through infested areas and the seeds have bristles that readily attach to the fur of livestock and the human clothing.

The plant is easily identified by the bright yellow flowers, the 1 inch long yellowish-brown spines protruding from the base of the flower head and the gray-green stems that have tiny, wooly hairs growing on them. The plant will grow anywhere from 6 inches to 5 feet in height and the leaves, while small, grow along the length of the stem giving it a winged appearance.

Yellow starthistle has been identified 41 states from coast to coast, including 16 counties in Kansas. It occurs mostly in the eastern and central parts of the state although it has been found in the west as well. While those populations are small and isolated, they can easily grow to become unmanageable problems. In California, for example, the plant was introduced in the late 1800s and was not thought to be much of an issue because it only grew in small patches in and around forage fields. Today it covers more than 12 million acres throughout the state and is considered to be one of the most ecologically and economically damaging invasive plants in the state. It often takes over large tracts of land, out-competing all other species until it is the only plant left growing.

If that were not enough, the yellow starthistle is poisonous to horses. It causes an usually fatal neurological disorder called “chewing disease” after being eaten. Symptoms include the inability to swallow, drowsiness, chewing with nothing in the mouth and spitting out food.

Integrated Weed Management provides several approaches to controlling yellow starthistle. Because it is an annual species, it can be easily controlled by pulling or digging the plant out of the ground. This, of course, works well for small infestations or individual plants but is very laborious for larger populations. Mowing does not work because the plant will start to flower below the height of the mower blade. For these larger infestations try applying aminopyralid or clopyralid in early spring. They both provide pre- and post-emergence protection and are residual in the soil for up to 5 months. Other herbicides such as 2,4-D, picloram, triclopyr and glyphosate also provide varying levels of control.

With any application of pesticides you are required by law to follow the label directions. Because yellow starthistle is not a designated noxious weed in Kansas, you will not be able to use cost-share chemicals to treat it.

Grazing with sheep or goats is also an effective option for controlling but not eradicating yellow starthistle. To prevent regeneration, turn the animals out to graze heavily at least twice a year before seeds are produced.

Keep in mind that if the plant has been growing for more than one year before you start controlling it, there will probably be seeds lying dormant in the

soil. Therefore, you will need to plan on working for three or more years to fully eradicate the infestation.

If you find yellow starthistle, do what you can to control it and also call the Kansas Department of Agriculture at (785) 862-2180 to report it.

*** New website: www.agriculture.ks.gov/divisions-programs/plant-protect-weed-control**

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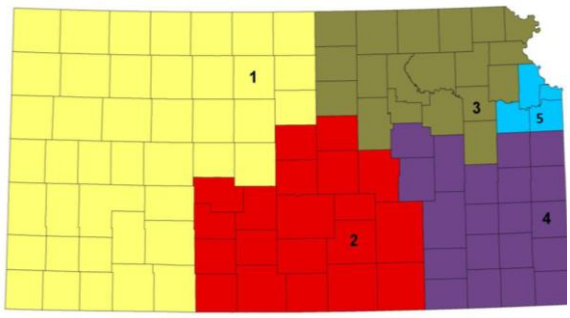

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046-13

PUBLICATIONS FOR OUTREACH:

Aquatic Weed Watch List

Purple loosestrife

Hydrilla

Phragmites

Eurasian water-milfoil

Giant salvinia

Curlyleaf pondweed

Kansas
Department of Agriculture
Plant Protection and Weed Control

Department of Agriculture
Plant Protection and Weed Control

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www.ksda.gov/plant_protection

Purple loosestrife *Lythrum salicaria*

An erect perennial herb, with a square, woody stem and opposite lance-shaped leaves. It can grow from four to ten feet high with many stems growing from a single rootstock. It produces a showy display of pinkish-purple flower spikes. Flowers have five to seven petals which, when viewed up close, appear to be wrinkled.

Hydrilla *Hydrilla verticillata*

Hydrilla's small leaves are strap-like and pointed. They grow in whorls of four to eight around the stem. The leaf margins are distinctly saw-toothed. Hydrilla often has one or more sharp teeth along the length of the leaf mid-rib. Produces tiny white flowers on long stalks. It also produces 1/4 inch shoots at the leaf axils and potato-like tubers attached to the roots in the mud.

Phragmites *Phragmites australis*

A very tall grass, also called common reed, that grows along rivers, lakes or other water bodies. It can grow to more than 15 feet in height and forms dense stands that are very difficult to walk through. The seed heads look like fluffy tufts at the tops of the stems. It forms a dense network of roots and rhizomes which grow near the surface and can often be seen.

Eurasian water-millfoil *Myriophyllum spicatum*

An emergent, herbaceous aquatic plant, its stems grow to the water surface and frequently form dense mats. Stems are long, branching and become leafless toward the base. The leaves of are finely divided and occur in whorls of three or four along the stem. These leaflets give it a feathery appearance that is a distinguishing feature of the plant.

Giant salvinia *Salvinia molesta*

A floating member of the fern family, it does not root into the ground but rather dangles its roots in the water. Of its three leaves, one is usually below the water's surface. As the plant grows, it forms long chains of tightly grouped leaves. The surfaces of the leaves are covered in rows of tiny hairs that, when examined closely, look like egg beaters.

Curlyleaf pondweed *Potamogeton crispus*

The leaves are reddish-green, oblong and about 3 inches long, with distinct wavy edges that are finely toothed. The stem of the plant is flat, reddish-brown and grows from 1 to 3 feet long. It looks reddish-brown while it is in the water but green when pulled out. Similar plants do not have tooth edged leaves.

If you suspect you have found one of these plants:

1. Photograph the plant at the site.
2. Collect a specimen, including roots if possible, and press between sheets of newspaper.
3. Record the location, with a GPS if possible, and land marks along with the legal description.
4. Describe the type of land use (cropland, road ditch, forest, etc.).
5. Describe the location (rocky, wet, dry, sandy).
6. Contact the State Weeds Specialist at the Department of Agriculture.

October 2012

November 2010

Kansas Plant Pest Alert

Kansas Department of Agriculture • Plant Protection and Weed Control • (785) 862-2180 • www.kda.gov

Brown Marmorated Stink Bug

What is a brown marmorated stink bug?

The brown marmorated stink bug is a native of Japan, Korea and China. It was first reported in the United States in Pennsylvania in 1998.

This insect invades houses in the fall and overwinters in large groups. They do not do any damage while in or on homes, but many people find them unpleasant to look at and they emit a strong odor when disturbed.

Adult brown marmorated stink bug feed on a peach in Allentown, Pennsylvania. Characteristic damage is evident. Photo courtesy of Gary Bernon, USDA-APHIS.

The most important concern is that the insect can become a serious pest to crops. They use their sucking mouthparts to feed on a wide variety of plants. Reported hosts are apple, peach, pear, citrus, figs, mulberries, soybean, corn, butterfly bush, Paulownia and other ornamental plants.

Feeding by this insect causes small spots of necrotic tissue on the outer surface of fruit and leaves. Catfacing can also occur on fruits like apple and peach.

Economic Importance

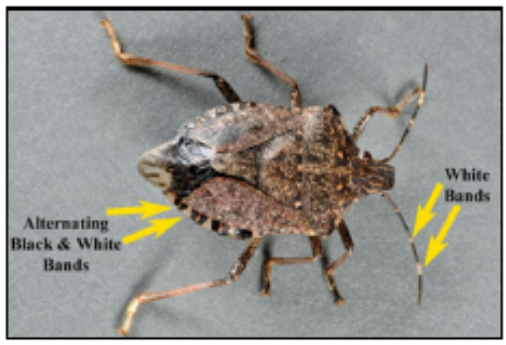
We are concerned about brown marmorated stink bug because it is a pest of many important crops in its native range. It attacks shade and fruit trees, vegetables and legumes. It will feed on flowers, stems and pods of several legumes. The disfiguration it causes to fruit crops may make them unmarketable.

This pest is likely to invade agricultural areas, and it poses a risk to various crops as it expands its range. Up to five generations of this insect are seen in southern China each year, a pattern that could be expected in the southern U.S.

Identification

The brown marmorated stink bug has a shield-shaped body and emits a pungent odor when disturbed. It has a marbled brown, 12-17 mm long (1/2-inch) body with alternating dark and light bands across the last two segments that appear as a single white band in both nymphs and adults. The antennae also have an alternating dark and light pattern.

Species that can be confused with the brown marmorated stink bug are the brown stink bug, the green stink bug, leaf-footed bugs, boxelder bugs and other similar hemipterans.



Key identification characteristics, both abdominal and antennal, of the brown marmorated stink bug.

If you find evidence of brown marmorated stink bug, contact the Kansas Department of Agriculture at (785) 862-2180.

Kansas Department of Agriculture


Insects in Kansas That May Be Confused With Emerald Ash Borer
Jeff Hahn, University of Minnesota Extension
Val Cervenka, Minnesota Department of Natural Resources
Kansas Department of Agriculture
0
16ths
1
emerald ash borer
bronze birch borer
twolined chestnut borer
flatheaded apple tree borer
Buprestis metallic Woodboring beetle
blister beetle
annual cicada
polydrusus weevil
halictid bee
blow fly
Japanese beetle
dogbane beetle
green stink bug
Chlaenius ground beetle
bark gnawing beetle
Poecilus ground beetle
sixspotted tiger beetle

Field bindweed — A non-native perennial in the morning glory family with arrowhead-shaped leaves and white to pink bell-shaped flowers. This Eurasian plant is found throughout Kansas and spreads via a fleshy root system and by seed.
Sericea lespedeza — A short-lived perennial in the bean family native to Asia. The plant has cream-colored flowers with purple markings and leaves with three parts. It is common in rangelands and prairies throughout eastern Kansas, especially in the Flint Hills.
Pignut or Hog potato — A perennial herb in the bean family native to extreme southwestern Kansas. The plant has yellow flowers and a deep root system with small potato-like growths that make the plant difficult to control and provide its colorful common names.
Kudzu — A perennial vine in the bean family native to Asia. The plant has large three-parted leaves and reddish flowers. Introduced as erosion control on mined lands in southeast Kansas, it's now found in only a few scattered areas of the state.
Bur ragweed — A native perennial from western Kansas in the aster family. The plant has an aggressive root system that spreads over large areas. The leaves are covered with silvery-gray hairs and the fruit is ringed by slender spines that have hooked tips.
Musk thistle — A biennial in the aster family and is native to Eurasia. Found throughout Kansas, the plant forms a rosette of spiny, white-edged leaves during the first year. The second year the plant sends up a stalk with spiny, purplish flower heads .
Russian knapweed — A non-native perennial in the aster family. Found sporadically in Kansas, this Asian plant has pink or purplish flower heads and forms dense stands from an extensive root system. This plant is toxic to horses if eaten.
Canada thistle — A perennial in the aster family with a spreading root system capable of growing 3' to 5' per year. The pink male and female flower heads occur on separate plants. Native to Eurasia, it is found on disturbed sites mostly in northwest Kansas.
Johnsongrass — A perennial grass from the Mediterranean that is related to and can hybridize with grain sorghum. The grass spreads aggressively by seeds and by thick, scaly roots. Found throughout Kansas it is common along roads and ditches.
Quackgrass — A non-native grass from Eurasia. The base of each leaf blade has a pair of tiny appendages that fold around the stem. Found at scattered, moist locations throughout Kansas, the grass spreads via seed and a vigorous, spreading root system.
Leafy spurge — A perennial in the spurge family that is native to Eurasia. The plant has a yellowish, flower-like disk below greenish flowers and a milky sap that is toxic to cattle. Leafy spurge is found in disturbed locations mostly in northern Kansas.
Hoary cress — A non-native perennial in the mustard family. The plant spreads via seed and its creeping root system. The leaves wrap around the hairy stems and fragrant white flowers occur at the stem tips. Found throughout Kansas, especially in the north half.
Bull thistle — A biennial in the aster family. The plant has a stalk of dark purple flowers with a ring of stiff spines at their base. Found throughout Kansas, this Eurasian plant is common along roadsides and other disturbed sites. Bull thistle is a county-option weed.
Multiflora rose — A large shrub in the rose family. The plant has arching stems armed with claw-like prickles. The white to pink flowers occur in clusters at the ends of stems. This Asian plant is found throughout Kansas. Multiflora rose is a county-option weed.
Kansas Department of Agriculture ● Plant Protection and Weed Control **P.O. Box 19282 ● Forbes Field, Building 282, Street I ● Topeka, KS 66619-0282** **Phone: 785-862-2180 I Fax: 785-862-2182 www.ksda.gov/plant_protection/**

What We Face

Thousand Cankers poses a serious threat to the health of black walnut trees. Walnut trees are important because they produce nuts and highly desired wood.

The Kansas Department of Agriculture, Kansas Forest Service and K-State Research and Extension need your help to educate clients to help stop the introduction, and to limit the spread, of this disease in Kansas.

We are deeply concerned that if the disease reaches the native range of black walnut in central and eastern Kansas, that we may lose this tree in both our urban and native forests.

Currently, the disease is known to exist in the nearby states of Colorado and New Mexico. Colorado scientists believe that the disease was brought into its urban areas by moving infected wood either as firewood or for woodworking.

Wood, bark and chips with beetles and cankers are highly contagious and should not be moved off of a site for at least three years.

Do not bring walnut wood into Kansas from out-of-state sources!

When Collecting Samples

When collecting branch samples, be aware of high lines and other obstructions.

Wear safety glasses and a hard hat.

Use only equipment that is in good working condition.

This one log from an alley in Denver is all it would take to start Thousand Canker disease in Kansas.

Kansas Department of Agriculture

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Surveying and Sampling for Thousand Cankers Disease of Walnut

Kansas Department of Agriculture

What to Look For in a Tree

Thousand Cankers disease of walnut is a progressive disease that kills a tree within two to three years after initial infection.

The disease causing fungus, *Geosmithia* sp., is transmitted by a small twig beetle. Branches and trunk tissue are killed by repeated infections by the fungus, as beetles carry the fungus into new bark cambium tissue, repeating the infection. That's why it is called Thousand Cankers disease.

Here are several key points to remember when surveying and sampling for Thousand Cankers. Dead trees require careful scrutiny of the localized area.

- Look for declining trees. Initial symptoms are yellowing and thinning followed by death in two to three years. This is early symptom development.
- Trees with dead leaves are highly suspect and an advanced symptom. Branches collapse in late spring and summer, and leaves die and remain attached to the branch. This flagging symptom is similar to Dutch Elm Disease.
- In Colorado, twig beetles are attracted to branches with southern and western exposure. Samples should come from this area of the tree, if possible.
- Collect a sample from branches 2 to 4 inches in diameter. Cut the branch down.

Be safe!

What to Look For in a Branch

Take a strong bladed knife or drawknife, and cut or scrape away the bark. Now take the knife and carefully slice the tissue directly under the bark parallel to the surface, peeling away the layers. If dieback is caused by Thousand Cankers, you will see:

- Black cankers about the size of a dime or larger.
- Beetle galleries in the centers of the cankers.

You may also see:

- Beetles about the size of a pencil lead.
- A gray spot/mass in some beetle galleries. This is a fungus colony.
- Small beetle entry holes in the bark above the cankers. Photo courtesy of M. Kennelly, KSU.

How to Verify the Cause

Collect and send a sample to verify Thousand Cankers. Take a sample of a branch with cankers that is about 2 feet long from two to four branches of the tree with a diameter of 2 to 4 inches. Trim excess branches and leaves, and double seal the sample in two large garbage bags. Box the sample with a description of where it was collected, including GPS data, and ship it to:

Jon Appel
Kansas Department of Agriculture
1711 Westbank Way
Manhattan, KS 66503

Black cankers that have coalesced on a branch 4 inches in diameter.

Look for leaves that died and remained attached to affected branches.

Beetle gallery in center of canker. Photo courtesy of Whitney Cranshaw, Colorado State University.

April 2011

Kansas Plant Pest Alert

Kansas Department of Agriculture • Plant Protection and Weed Control • (785) 862-2180 • www.ksda.gov

Thousand Cankers Disease of Walnut

Dear Stakeholder,

The Kansas Department of Agriculture is asking landowners, arborists, woodworkers, the timber industry and the public to be on the lookout for a new disease affecting walnut trees: thousand cankers disease. Early detection is very important.

We need your help to detect this disease, which threatens our black walnuts in native woodlands, planted woodlots and the landscape.

The disease may enter Kansas by the natural movement of the bark beetle, or human activity such as moving firewood, nursery stock, or untreated wood or logs.

If you think you have seen evidence of this disease, notify our Plant Protection and Weed Control program immediately at (785) 862-2180.

Kansas Department of Agriculture

What is it?

- The disease is caused by the fungus, Geosmithia that causes a black canker.
- TCD is transmitted by the walnut twig beetle, 1/16 of an inch in length.

W. Cranshaw, CSU

Where does it come from?

- The disease is found in states primarily west of Kansas, including Colorado and New Mexico but also Tennessee.

What should I look for?

- Upper crowns yellowing and thinning, then branches die and the entire tree may suddenly wilt and die. Small black cankers are just under the bark with insect galleries.
- Trees die within about three years from initial symptoms.

Who should I call if I find it?

- Call the Kansas Department of Agriculture at (785) 862-2180.

Above: late stage wilting, dying walnut (M. Mielke, U.S Forest Service)

Right: Dark cankers directly under the bark found on branch (J. Appel, KDA)

Do not move walnut trees or untreated wood into Kansas.

Kansas Department of Agriculture

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www.ksda.gov/plant_protection

Invasive Pests Watch List

Kansas Department of Agriculture

Have you seen any of these pest? If so, notify the Kansas Department of Agricultures Plant Protection and Weed Control program

Gypsy Moth

Red Imported Fire Ant

Khapra Beetle

Granulate Ambrosia Beetle

Emerald Ash Borer

Asian Longhorn Beetle

Gypsy Moth (*Lymantria dispar* Linnaeus) - Adult moths are rather large, with a wingspan of 1.5 inches for males and up to 2.5 inches for females. The male is dark brown and the female light gray with dark wavy bands across the wings. The male is a strong flier, but the female is so heavy bodied that she cannot fly.

Red Imported Fire Ant (*Solenopsis invicta* Buren) - The pedicel, or "waist" in the RIFA is two segments. Workers are (polymorphic) between 2.4 to 6 mm (1/8 to 1/4 in) (Hedges 1998). The mandible has four teeth and the antennae are 10-segmented, ending in a two-segmented club. Body color is usually red to brown in color with a black gaster with a stinger on the tip. (Hedges 1997). Nests vary in shapes and sizes, with a honey-comb like inside and can appear dome-shaped up to 40cm high, usually with no obvious entry or exit hole. Mounds are usually found in open areas such as lawns, pastures, roadsides and unused cropland, but rarely in cultivated areas. RIFA are similar to common ant species, so be careful not to confuse them with species which are commonly called fire ants.

Khapra Beetle (*Trogoderma granarium* Everts) - The sign of a khapra beetle infestation is the presence of cast skins and larvae. Molting during the larval stage results in numerous cast skins. The larvae are yellowish to golden brown and mature larvae are about one-quarter inch long. Adults are oval shaped, brown to blackish, with lighter brown patterns on the back and various shades on the wings. Adult females are about one-eighth inch long and males are somewhat smaller. Adults are short-lived, persisting for only one or two weeks. It is a native of India and considered one of the 100 worst invasive species in the world. The beetle prefers hot, dry conditions and can be found in areas where grain and other potential food is stored, such as pantries, malt houses, grain and fodder processing plants and stores of used grain sacks or crates.

Granulate Ambrosia Beetle (*Xylosandrus crassiusculus* Motschulsk) - Adults are small reddish brown with a downward facing head. A granulated (rough) region is located on the front portion of the head and long setae (hairs) can be observed on the back end of the elytra (wing covers). Females are 2 –2.5 mm and males are 1.5 mm long. Populations are predominately female and males are rare and do not fly. Larvae are C-shaped with a defined head capsule. This is an insect pest of ornamental, fruit and nut trees and a significant pest of nurseries and orchards.

Emerald Ash Borer (*Agrilus planipennis* Fairmaire) -Adults are slender, elongate and 7.5 to 13.5 mm long. Males are smaller than females and have fine hairs on the ventral side of the thorax, which the females lack. Color varies but adults are usually bronze or golden green overall, with darker, metallic, emerald green wing covers. The top of the abdomen under the wings is metallic purplish red and can be seen when the wings are spread. The prothorax, the segment behind the head to which the first pair of legs is attached, is slightly wider than the head but the same width as the base of the wing covers.

Asian Longhorned Beetle (*Anoplophora glabripennis*) - Individuals are .75 to 1.25 inches long with jet black body and mottled white spots on the back. The long antennae are 1.5 to 2.5 times the body length with distinctive black and white bands on each segment. The feet and antennae may have a bluish tinge.

If you suspect you have found one of these pests:

1. Collect a specimen if possible. More than one specimen is helpful for identification. At least 10 individuals are requested for ant identification.
2. Preserve ants and beetles in alcohol.
3. Place moth specimens in a container or plastic bag and freeze.
4. Record the location noting land marks, a legal description or physical address.
5. Describe the situation where the pest was found (landscape, forest, park, roadside, cropland).
6. Note pest level of occurrence (single pest, low, moderate, high).
7. Contact the Kansas Department of Agriculture Plant Protection and Weed Control.

Kansas Department of Agriculture • Plant Protection and Weed Control
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Revised October 2011

Invasive Weed Watch List

Kansas Department of Agriculture

Have you seen any of these plants? If so, notify the Kansas Department of Agriculture's Plant Protection and Weed Control program.

PURPLE LOOSESTRIFE

HYDRILLA

SPOTTED AND DIFFUSE KNAPWEED

COGON GRASS

BLACK SWALLOW-WORT

YELLOW TOADFLAX

DALMATIAN TOADFLAX

TROPICAL SODA APPLE

Key identifying features:

Purple loosestrife ***(Lythrum salicaria)*** – Flowers have 6 petals, square stems with opposite leaves.

Hydrilla ***(Hydrilla verticallata)*** – Hydrilla's small leaves are strap-like and pointed. They grow in whorls of four to eight around the stem. The leaf margins are distinctly saw-toothed. Hydrilla often has one or more sharp teeth along the length of the leaf mid-rib.

Spotted knapweed ***(Centaurea biebersteinii)*** – Flowers pink to purple, rarely white, disc florets. Bracts have 5-7 pairs of comb like teeth, no spine at bract tip. Leaves alternate on stem ½ to 2 inches long.

Diffuse knapweed ***(Centaurea diffusa)*** – Flowers white to rose or purple. Bracts have comb like teeth with a distinct terminal spine. Leaves similar to spotted knapweed.

Cogon grass ***(Imperata cylindrica)*** - Off-center midrib on leaf blades, more apparent towards the tip of the blade.

Black Swallow-wort ***(Cynanchum louiseae)*** – Herbaceous, perennial vine with twines 3-8 feet high. Its leaves are dark green and shiny, opposite, 2-5 inches long, and narrowly to broadly oval with pointed tips. Flowers are tiny and dark purple with 5 pointed, downy, triangular petals that are as long as they are wide. Seedpods are milkweed-like, slender and tapered, and 1.5-3 inches long.

Yellow toadflax ***(Linaria vulgaris)*** – Bright yellow flowers with an orange throat and long spur. Linear leaves with a narrow stem.

Dalmatian toadflax ***(Linaria genistifolia spp. dalmatica)*** – Bright yellow flowers with a long spur and heart shaped leaves that clasp the stem.

Tropical Soda Apple ***(Solanum varium)*** – Flowers white with 5 recurved petals. Mature plants are 3 to 6 ft tall and have white to yellowish spines up to ¾ inch long. Fruit ¾ to 1 ¼ inches in diameter mottled whitish to light green like a watermelon. Closely resembles horse nettle (Carolina nightshade) only much larger.

If you suspect you have found one of these plants:

1. Collect a specimen including roots if possible and press between sheets of newspaper.
2. Photograph the plant at the site.
3. Record the location noting landmarks along with the legal description
4. Describe the type of land use (cropland, road ditch, waste area, stream bank).
5. Describe the location (rocky, wet, dry, sandy).
6. Contact the state weed specialist at the Kansas Department of Agriculture's Plant Protection and Weed Control program.

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